

Data Center Rack PDU - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Data Center Rack PDU Market size is estimated at USD 2.57 billion in 2024, and is expected to reach USD 3.73 billion by 2029, growing at a CAGR of 8.01% during the forecast period (2024-2029).

Key Highlights

- The data center rack PDU market is increasing due to the rising demand for efficient power management solutions in data centers. With the rapid development of cloud computing, digitalization, and data-driven applications, data centers need consistent and scalable power distribution to support their operations. Data center rack PDUs offer remote management, real-time monitoring, and efficient utilization of power resources that ensure optimal performance and lower downtime.
- Additionally, the increasing focus on sustainability, energy efficiency, and cost savings further drives the adoption of advanced rack PDUs, which enable effective power usage monitoring and distribution in modern data center infrastructures.
- Further, the need for cooling systems increases with rising temperatures in data centers, which lowers additional costs related to equipment cooling. However, the exhaust temperature is also growing along with the indoor temperature in data center buildings. Therefore, it is essential to use PDUs with high ambient temperature specifications to prevent equipment failures brought on by overheating. These previously mentioned elements have increased demand for high-rated power distribution units, which is anticipated to drive the growth of the data center rack power distribution unit market throughout the forecast period.
- Hardware costs, infrastructure prices, and taxes over equipment have been amounting to relatively expensive data center running costs. This has limited the market's growth to highly-resourced firms to absorb higher costs with the data center setups. Further, a lack of proper regulatory compliance will affect the market and greatly slow down the adoption of colocation among companies. Lack of regulatory compliance is expected to be a major challenge for the market's growth over the next five years.
- Due to the COVID-19 pandemic, individuals were advised to stay home as a preventive measure. Several companies followed work-from-home policies to protect their employees and serve their clients. This led to increased digital traffic and usage of online

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communication services. Data centers were crucial in safeguarding and maintaining secure digital infrastructure during that uncertain time. This crisis shifted the focus towards the importance of improved digital infrastructure coupled with data centers, thereby paving the way for the market's growth. This impacted the data center rack PDU market positively.

Data Center Rack PDU Market Trends

Colocation Segment Holds Significant Market Share

- The growth in the number of data centers, especially colocation data centers, positively impacts the data center rack PDU market. As more businesses choose to colocate their IT infrastructure to take advantage of cost savings, scalability, and shared resources, the demand for rack PDUs to support these facilities will likely increase.
- For decades, rack power distribution units (PDUs) have been an integral part of power distribution architectures in data centers. In the colocation environment, these PDUs provide the end customers with several benefits, such as enhanced operational efficiency, increased monitoring, and security of their IT equipment.
- According to Cloudscene, as of January 2022, there were 2,701 data centers in the United States and 487 in Germany. The United Kingdom ranked third among countries in the number of data centers, with 456, while China recorded 443. Such a huge number of data centers is expected to create growth for PDU equipment.
- The colocation business has evolved significantly over the past ten years, with the role of the data center being central to that evolutionary process. Since its inception, colocation data centers have been an attractive solution to many small-scale and hyperscale players equally, as it allows organizations to address their storage issues without substantial upfront costs.
- The need to reduce the overall IT expenditure, the rising requirement for scalable data centers, and the growing data center complexities are the major drivers for the growth of the colocation business.
- Intelligent power distribution units (PDUs) that possess the ability to monitor and manage power data from the rack and device level are increasingly being deployed in the colocation centers, owing to the end customers' need to monitor the capability of PDUs to ensure the availability of power to all their IT equipment.
- Operators of colocation data centers are also increasingly deploying data center infrastructure management (DCIM) software to pair with these intelligent PDUs to monitor and track power data. This system also enables the end customers to monitor their power usage in real time and provides the ability to establish alarm thresholds to control the usage of power. Such advancements in technology are driving the demand for the market studied.

North America is Expected to Register Significant Growth

- Newer technologies are quickly adopted in the country. Investors in data centers are increasingly finding new locations. The worldwide development of 5G networks, of which the United States is one of the early adopters, has boosted the significance of edge data centers. Many American operators, including EdgePresence, EdgeMicro, and American Towers, have begun making investments in these facilities.
- According to Cisco Systems, the amount of mobile data traffic in the United States has grown significantly over time, from 1.26 exabytes of data traffic per month in 2017 to 7.75 exabytes per month by 2022. This data flow is anticipated to triple by 2030, according to Ericsson. In order to link such scale conveniently, low latency and high bandwidth requirements must be secured. As a result, the distributed cloud is starting to operate. Which has fueled the demand for data center rack PDUs in the country.
- Furthermore, Internet usage by individuals and organizations is rapidly increasing in the United States. The nation is the largest market for data center operations, and it is still expanding as a result of increased end-user data consumption. The market for US hyper-scale data centers is being significantly fueled by the rising IoT, which is encouraging the construction of new facilities to

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handle the exabytes of data generated by consumers and commercial users.

- Canada is also constantly expanding and offering more data center infrastructure solutions due to rising demand for efficient data centers, initiatives to provide environmentally friendly data center solutions, and a significant increase in power density in the region. Which has created significant opportunities for the data center rack PDU market.
- The growth of the data center rack PDU market is directly related to the launch of data centers and various market players investing in the data center expansion country. The data center rack PDU market is anticipated to flourish. Additionally, Augmented use of IoT platforms by variable sectors, such as agriculture, manufacturing, and cities, has subsidized the increasing data consumption, which has activated the demand for data centers in Canada. Such developments are also expected to aid the growth of the studied market during the forecast period.

Data Center Rack PDU Industry Overview

The data center rack PDU market features moderate consolidation with a diverse range of products available. However, prominent vendors such as Schneider Electric, Enlogic, Legrand, Cyber Power Systems, and ABB Group, among others, are highly preferred providers of data center rack PDUs across various regions.

In June 2023, the Kanpur Metro chose ABB India's Electrification solutions for ensuring safe, reliable, and high-quality power distribution. ABB's cutting-edge technology plays a pivotal role in ensuring a seamless and comfortable commuting experience for passengers. ABB India's contribution to the Indian Microsystems includes providing electrification solutions to 13 metro rail projects across India.

In May 2023, Legrand introduced the industry's next generation of intelligent rack PDUs, the PRO4X and PX4. These innovative products combine the best hardware and software technologies from previous Raritan and Server Technology rack PDUs while introducing groundbreaking features and top-tier hardware for enhanced visibility and security. Notably, they are the first rack PDUs to estimate total harmonic distortion at both the device and cabinet levels, offering data center operators precise and comprehensive internalized power quality monitoring, including waveform capture capabilities.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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